

**CLAIMS**

1. Method for measuring characteristic properties of a pneumatic tyre for vehicle wheels, comprising the steps of:
  - 5 - arranging at least one array of deformable sensors (10) along a direction y transversal to a motion direction x of a pneumatic tyre (2) for vehicle wheels, said at least one array of sensors (10) extending for a length at least equal to the dimension of said pneumatic tyre (2) along said direction y;
  - 10 - making said pneumatic tyre (2) pass at speed over said at least one array of sensors (10) along said motion direction x;
  - generating, for each sensor (10) of said at least one array of sensors (10), an electrical signal proportional to a speed of deformation of said sensors (10) when they contact said pneumatic tyre (2);
  - detecting said electrical signal generated by each sensor (10) of said at least one array of sensors (10);
  - 15 - determining, starting from each detected electrical signal, at least one characteristic property of said pneumatic tyre (2).
2. Method according to claim 1, wherein said at least one characteristic property of said pneumatic tyre (2) is the size of a footprint area of said pneumatic tyre (2) along said motion direction x.
- 25 3. Method according to claim 1 or 2, wherein said at least one characteristic property of said pneumatic tyre (2) is the shape of said footprint area.
- 30 4. Method according to any one of the previous claims, wherein said at least one characteristic property is the distribution of pressure acting upon the footprint area of said pneumatic tyre (2).
5. Method according to any one of the previous claims,

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comprising the step of arranging a plurality of arrays of sensors (10) all substantially parallel and transversal to said motion direction x of said pneumatic tyre (2).

6. Method according to any one of the previous claims,  
5 wherein said motion speed of said pneumatic tyre (2) is  
greater than or equal to 30 Km/h.

7. Method according to any one of the previous claims,  
wherein said at least one array of sensors (10) is housed  
in a seat formed on a drum (6) of a wheel simulating the  
10 road surface.

8. Method according to any one of claims from 1 to 6,  
wherein said at least one array of sensors (10) is housed  
in a seat (4) formed on a road surface.

9. Method according to any one of the previous claims,  
15 wherein said at least one array of sensors (10) is  
associated with a support plate (3).